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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,604	10/24/2000	David A. Hintz	550270.90972	4904

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EXAMINER

GONZALEZ, JULIO C

ART UNIT PAPER NUMBER

2834

DATE MAILED: 10/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/695,604

Applicant(s)

HINTZ ET AL.

Examiner

Julio C. Gonzalez

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-9, 11, 12, 14-16 and 18-21 is/are rejected.
- 7) ☒ Claim(s) 10, 13 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4, 5, 7-9, 11, 12, 14-16, 19 and 21 rejected under 35

U.S.C. 103(a) as being unpatentable over Rice et al in view of Yamaguchi, Mori et al and Microelectronic Circuits by Sedra/Smith.

Rice et al discloses a system comprising an operational amplifier having input resistor connecting the input to a signal indicative of an alternator (see figure 10), a feedback resistor 10K connected between the input and output, a processor 12 coupled to the output and an A/D converter 24 being connected to the processor (see figure 1A) and a transformer 162 being connected to the input of the amplifier. However, Rice et al does not disclose explicitly having a switching element in parallel with a resistor.

On the other hand, Yamaguchi discloses for the purpose of reducing amplification error due to analog and resistance elements, an operational amplifier 1 having an input resistor R_{in} , a feedback resistor R_1 , connected between the input

and output, an adjustment resistor R_2 and a switching element SW2 coupled in series between the input and output, in parallel with the feedback resistor (see figure 1).

However, neither Rice et al nor Yamaguchi disclose explicitly using a controller to control a switch, which affects the alternator.

On the other hand, Mori et al discloses for the purpose of suppressing a sudden rise in field current, an alternator 1 having winding 11 and the winding being excited by a field winding 13, wherein the field winding is controlled by a control circuit 16 that has a switch 161 and an amplifier 164 with a feedback resistor 165 (see figures 2, 11).

It is well know in the art that the feedback of an amplifier can be varied depending of the values of the feedback resistor, the input voltage or/and input current and other factors. However, for the sake of clarification, certain pages of an introduction to electronics book, Microelectronic Circuits, for college students has been provided, which clearly show that it is well know to one having ordinary skill in the art that the gain may be varied depending on a current. For example, page 668 of the enclosed pages, it is taught that the feedback may be controlled by input and output impedances depending on the needs and the gain may be also reduced (*amount of feedback*). An amplifier may have different gains depending

Pages 702-707 show how the current and other factors such as the resistance of the resistor and the current affects the feedback loop and the gain of the circuit. Other types of gains and feedback are obtained by different implementation of the input current, etc (see page 709).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design an amplifier connected to an analog to digital converter as disclosed by Rice et al and to use a feedback resistor, an adjustment resistor and a switch for the purpose of reducing amplification error due to analog and resistance elements as disclosed by Yamaguchi and to explicitly disclose using a switch for controlling an alternator for the purpose of suppressing a sudden rise in field current as disclosed by Mori et al and to show that a circuit may be designed using gain/feedback implementation and that the gain of an amplifier may be affected by the input current; one of reasons for a good implementation of a desired gain is to reduce the effect of noise (page 668) as disclosed by Microelectronic Circuits by Sedra/Smith.

3. Claims 6 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rice et al, Yamaguchi et al, Mori et al and Microelectronic Circuits by Sedra/Smith as applied to claims 1 and 14 above, and further in view of Denaci.

The combined system discloses all of the elements above. However, the combined system does not disclose an A/D converter being connected to the processor.

On the other hand, Denaci discloses for the purpose of controlling starter acceleration thus increasing the likelihood of having successful ignition, an A/D converter 48 being connected between the processor 26 and the amplifier 46 (see figure 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined system as disclosed above and to use an A/D converter for the purpose of controlling starter acceleration thus increasing the likelihood of having successful ignition.

4. Claims 3 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rice et al, Yamaguchi, Mori et al and Microelectronic Circuits by Sedra/Smith as applied to claims 1 and 14 above, and further in view of ordinary skill in the art.

The combined system discloses all of the elements above except for percent threshold ranges.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to come with those optimum ranges that the applicant discloses, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In *re Aller*, 105 USPQ 233.

Allowable Subject Matter

6. Claims 10, 13 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments with respects to claims 1-21 have been fully considered but, are moot in view of new grounds of rejection.

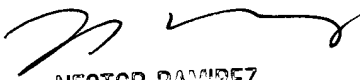
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julio C. Gonzalez whose telephone number is (703) 305-1563. The examiner can normally be reached on M-F (8AM-5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


NESTOR RAMIREZ
SUPERVISOR, PATENT EXAMINER
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Jcg

October 24, 2002